



Instruction Manual for

WITT PATBOX



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WITT-TECHNOLOGY FOR GASES

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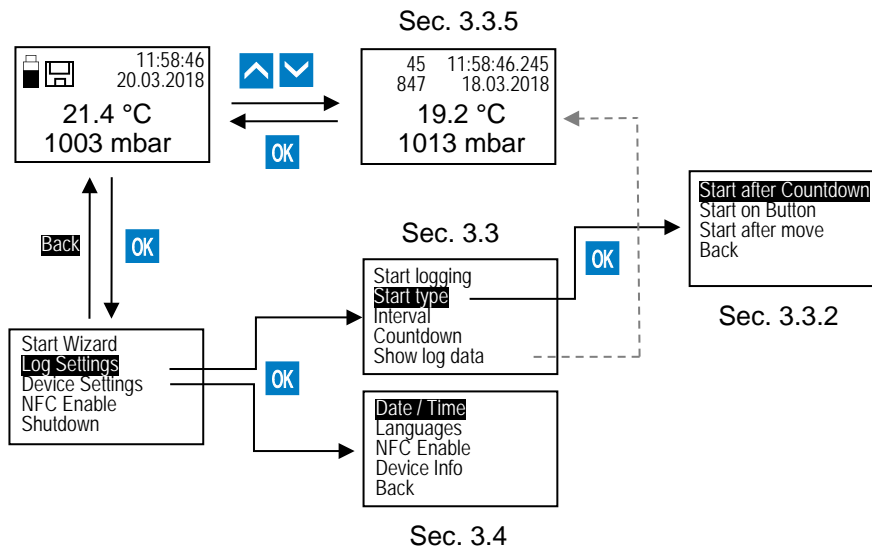
2 Description of the PATBOX

The PATBOX is intended to log the pressure and temperature of its surrounding. The time interval for storing measurement values is settable between 100 milliseconds and 24 hours. The measurement values are stored with date and time of the measurement.

There are several methods to start a measurement: Start on pressing a button, start after a settable count down time expired or start on movement of the PATBOX.

By means of a NFC connection, log data can be transferred to suitable external device.

2.1 Overview of the most important menus



3 Operation

The PATBOX has no ON / OFF button.

If not used for a certain time or during longer measurement, the PATBOX changes to energy saving mode where at least the display is switched off.

As long as the storage battery is sufficient charged, the operation of the buttons will always be monitored.

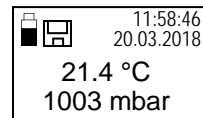
Before using the PATBOX we recommend to check the charge state of the storage battery, as well as the set date and time.

3.1 Switch ON the PATBOX

- Press and hold the button for about 3 seconds.

The measurement window is indicated. The following is shown:

- The charging state of the storage battery ().
- If log data are stored the symbol () is indicated.
- The actual set time and date.
- The actual measured temperature.
- The actual measured pressure.



The indicated measurement values are not stored.

- With button you proceed to the main menu.
- With buttons you proceed to the indication of stored log data (Sec. 3.3.5).

3.1.1 Using buttons in menus

In pure textual menus the indication of the selected menu item is inverted (cursor).

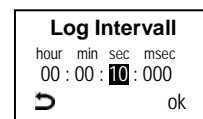
Select another menu item using buttons .

Select the actual menu item using button .



In some menus numerical values can be altered. Proceed as follows:

- Use buttons / to select a value.
- Press to edit the currently selected value – the cursor starts blinking.
- Use buttons / to alter the value.
- Press to confirm the alteration.



- Use buttons / to select another value for alteration and proceed as described before.

To confirm all changes and leave the menu:

- Select and press .

To discard all changes and leave the menu:

- Select and press .



For special keyboard commands, see Section 3.8.

3.2 Start logging using the “Wizard”

If you are in the measurement window:

- Press **OK** to proceed to the main menu.
- Select the menu item «Start Wizard» with **OK**.



Start Wizard
Log Settings
Device Settings
NFC Enable
Shutdown

All settings that are important for logging are indicated one after another.

The settings can be acknowledged or altered on demand. See Section ### 3.3 for details.

- «Delete Log data» → Yes / No
- «Interval» → confirm time / alter time / stop Wizard with ↶.
- «Start type» → confirm setting / alter start type
- «Countdown» → confirm time / alter time / stop Wizard with ↶.
(indication only on selection of certain «Start types»)
- «Start logging» → Yes / No

Logging will start, as soon as the actual selected start condition is fulfilled (see menu item «Start type», Section 3.3.2).

During logging the display will be deactivated.

3.2.1 Check / stop a running logging

- To check whether a logging is in process, press **▲** or **▼**.
If this is the case, «Logging...» will be indicated for some seconds.
- To stop logging, press **OK**.

3.3 The menu «Log Settings»

In this menu, you can set a start condition for logging and the time interval for storing measurement values during logging.

- Select (**▲** **▼**) «Log Settings» in the main menu and confirm with **OK**.



Start Wizard
Log Settings
Device Settings
NFC Enable
Shutdown

The menu «Log Settings» is indicated. The menu items are:



Start logging
Start type
Interval
Countdown
Show log data

3.3.1 The menu item «Start logging»

- Select menu item «Start logging» in the main menu and confirm with **OK**.

After selection, the actual set parameters are indicated in several windows (use **▲** **▼** to change between these windows). Alterations are not possible in these windows.

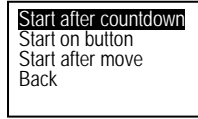
After pressing **OK**, a security query must be confirmed with “Yes” to start logging.

3.3.2 The menu «Start type»

- Select «Start type» and confirm with **OK**.

Here one of the three possible logging start conditions can be selected:

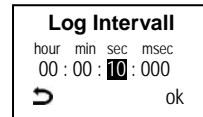
- Start condition: **«Start after countdown»**:
After logging is started, the real recording of the measurement values starts after the set count down time expired. This count down time is set as “Countdown” (see Sec. 3.3.4).
- Start condition: **«Start on Button»**:
After logging is started, the real recording of the measurement values starts after confirming the start with “Yes”.
- Start condition: **«Start after move»**:
After logging is started and the start is confirmed, first the time set as “Countdown” (see Sec. 3.3.4) must expire. During this time the device can be placed. The real recording of the measurement values starts after the device determines movement.



3.3.3 The menu «Interval»

In this menu, you can select the time interval (min. 100 milliseconds, max. 24 hours) for storing measurement values.

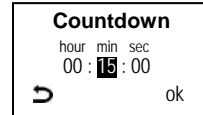
- Set the desired time interval
in: **hours : minutes : seconds : (100) milliseconds**,
as described in Section 3.1.1.



The set time interval is valid for all selectable “Start types”.

3.3.4 The menu «Countdown»

In this menu, the “Countdown” time can be altered. This time is used for the start types “Start after countdown” and “Start after move”.
Set as described in Section 3.1.1.

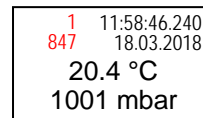


3.3.5 The menu «Show log data»

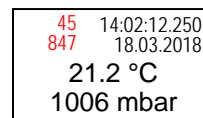
In this menu, you can see all data sets (time, date, measured temperature and pressure at that time) currently stored at the PATBOX.

- Select «Show log data» and confirm with **OK**.
Alternative: Press **▲** or **▼** in the measurement window.

The first data set (in the example 1 of 847) is indicated.



- Use **▲▼** to navigate to other data sets (in the example 45 of 847).
- To leave this menu, press **OK**.



You proceed directly to the measurement window.

3.3.6 The menu «Delete log data»

Be careful – using this function will delete all measurement data!

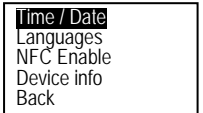
- Select «Delete log data» and confirm with **OK**.
- To delete all stored measurement, confirm the following security query with “YES”.

3.3.7 The menu item «Back»

Menu item to leave the menu without performing any (further) action / setting.

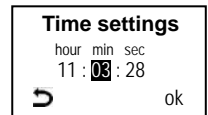
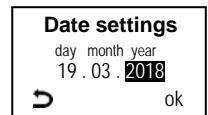
3.4 The menu «Device Settings»

- Select (**^** **v**) «Device Settings» in the main menu and confirm with **OK**.



3.4.1 The menu «Date / Time»

- Select «Time / Date» and confirm with **OK**.
- Select «Date» or «Time» in the submenu and confirm with **OK**.
- Set as described in Section 3.1.1.



3.4.2 The menu «Languages»

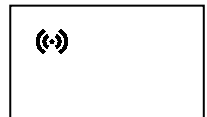
- Select the desired language.
- Pressing **OK** confirms the selected language.
- To exit the menu, select “Back” and confirm with **OK**.

3.4.3 The menu item «Device info»

After selecting this menu item, the software version and serial number will be indicated.

3.5 The menu item «NFC enable»

After selecting this menu item, the device will try to establish a **N**ear **F**ield **C**ommunication to an external device (e.g. a smart phone as used in the following descriptions).

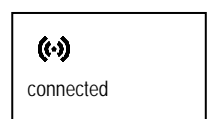


- Start the application «PATBOX control» at the smartphone.
- Place the back of the PATBOX to the back of the smartphone.
Note: To get a stable connection, the PATBOX should be placed directly above the NFC antenna of the smartphone. If their position is unknown, move the PATBOX until a stable connection is established.

After establishing a connection there is an acoustic signal of the smartphone. In addition, the buttons for triggering the PATBOX are not shown greyed out any more. In addition, “connect” is indicated on the display of the PATBOX.

You find references for the application «PATBOX control» in Section 5.

- To stop this function press **OK**.



3.6 The menu item «Shut down»

After selecting this menu item and confirming the following security query with “YES”, the device will be set to energy saving mode.

3.7 The menu item «Back»

Menu item to leave the menu without performing any (further) action / setting.

3.8 Special keyboard commands

- If you press and hold button **OK** for about 3 seconds, you proceed to the measurement window.
- If you press and hold both buttons **▲** **▼** for about 3 seconds, the PATBOX will reboot.

4 Charging the PATBOX

If the storage battery is completely discharged, the following should be noticed:

- The PATBOX cannot be activated before charging. The charging indication will be indicated some time after putting the PATBOX on the charging pad.
- The date and time setting can be lost. After charging, these settings should be checked and corrected if necessary.
- Connect the charging pad to the mains using the mains adapter. Alternatively, voltage supply (5 V) of the charging pad can be done via USB port of a PC by means of a suitable USB cable.

After connecting to a voltage supply a red LED at the charging pad lights.

- Press and hold the button **OK** for about 3 seconds to activate the PATBOX (the display must be activated – the measurement window should be indicated).
- Put the PATBOX centrically on the charging pad.

If the symbol for the charging state of the storage battery is animated after some seconds, charging is in process.

The LED at the charging pad lights violet / blue now.






Note!

During charging the device becomes warm.

Thus, measurement during charging and sometime afterwards will not achieve proper results.

5 The application «PATBOX control»

- Buttons  /  fade in / out the menu items «Log Data» and «Logging Parameter».
- Use button  to proceed to the menu «Device Parameter».

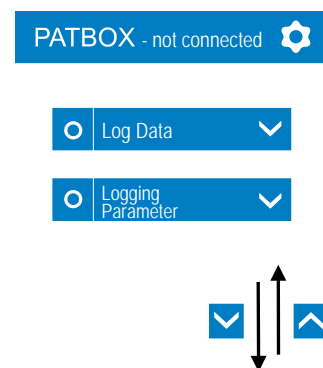
By using [Query](#) in the sub menus, you can read out the settings of the connected PATBOX, alter them and send them back with [Send](#).

If there is no connection or if a connection is interrupted, the buttons [Query](#) / [Send](#) are shown greyed out and without function.



Note:

Many sub menus are only accessible, if a connection to a PATBOX exists.



5.1 Downloading of log data

- Select menu item «Download Log Data from PATBOX».
- Press [Query](#).

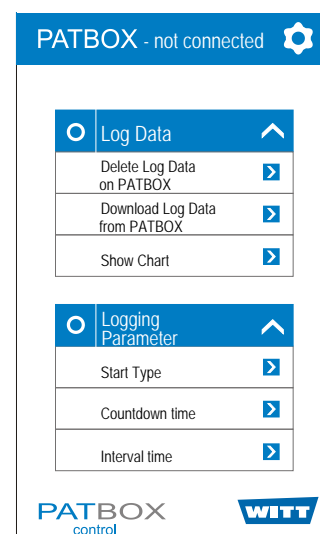
The log data are transmitted from the PATBOX.

Earlier transmitted identical datasets are recognized during transmission and not stored a second time.

5.2 Graphical presentation / mailing of log data

- Select menu item «Show Chart».
- Select the serial number of the desired PATBOX, if there are data of more than one device.
- Select the desired data for indication.


Note: If you select the desired data for about 2 seconds, you have the opportunity to send these data per mail.



The displayed graphic can be scaled up and down and displaced.

5.3 Firmware Update

The application automatically looks in internet for actual firmware to use. To actualize the firmware of the PatBox:

- Use button  to proceed to the menu «Device Parameter».
- Establish a connection to the PatBox.
- Actuate button «Firmware Update», to transfer data to the PatBox. During transmission the connection to the PatBox must not be interrupted.

The data are transferred to the PatBox. The progress is indicated during transmission.

If the transmission is complete, the connection can be interrupted.

The PatBox checks the transferred file for correctness and updates the firmware afterwards. According messages are indicated on the display.

6 Technical Data

Pressure range:	1 to 2000 mbar (abs)
Accuracy:	± 4 mbar
Resolution:	1 mbar
Temperature range:	-20 to 60 °C
Accuracy:	± 0.5 °C
Resolution:	0.1 °C
Logging interval:	Settable from 0.1 second to 24 hours (in steps of 0.1 s)
Memory:	Flash chip
Capacity:	8 MB
Number of records:	approx. 600,000
Communication:	NFC (N ear F ield C ommunication)
Housing:	Shock resistant plastic
Weight:	< 60 g
Dimension:	90 x 50 x 20 mm
Enclosure rating:	IP 55
Battery capacity:	550 mAh
Run time:	1.5 to 7 days, according to set logging interval
Charging:	Wireless by Qi standard (device is scope of delivery)
Approvals:	CE-marked according to: EMC 2014/30/EU Company certified according to ISO 9001 and ISO 22000

7 Approvals / Notes

7.1 EU - Europe

We herewith declare that the device PATBOX,

- is allowed to be operated in every member state, according to Article 10(2) of Directive 2014/35/EU.
- has no restrictions according to Article 10(10) of Directive 2014/35/EU.

Also see separate Declaration of conformity.

7.2 USA - Federal Communications Commission (FCC)

FCC-ID: 2APM9599100004

NOTE:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE:

Changes or modifications made to this equipment not expressly approved by (manufacturer name) may void the FCC authorization to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.